# The Loudoun County Strategic Watershed Management Solutions (SWMS)

February-June, 2006

# Declaration of Cooperation **Executive Summary**

The Declaration of Cooperation (DOC) provides a consensus strategy for guiding Loudoun County's watershed planning process. The DOC was created by the 69-member Loudoun Strategic Watershed Management Solutions (SWMS) Team, consisting of representatives of 41 different development, agriculture, conservation, county, state, federal and citizen interests. Team members worked over the course of four intensive meetings (February to June 2006) to develop this consensus guidance, and request the Loudoun County Board of Supervisors and Towns enact resolutions of support for the DOC.

In recognition of the need for continued collaboration through the watershed planning process, the DOC describes recommendations for the County strategy for watershed planning and also identifies specific Team member commitments for supporting the County strategy. (For further background on SWMS, see the Summary of SWMS, page 3. For specific commitments of Team members, see Appendix 4.)

**Need:** Loudoun County currently manages its water resources through a variety of diverse programs, but has no county-wide watershed plan that connects these programs or establishes priorities among the programs. A watershed plan will bring together the County's needs, priorities, and implementation plans into a specific project that will protect and restore its water resources. The plan will provide an integrated picture of federal and state obligations for removing pollutants from Loudoun's waters, combined with priorities for protecting drinking water and preventing pollution of currently clean waters. (For more specifics on what a watershed plan will cover, see the Summary of SWMS, page 3.)

**Principles, vision, values, and goals:** The SWMS Team identified guiding principles for the planning process and crafted a vision, values and goals for the watershed plan, which may be found in the Declaration of Cooperation. (*See Section II.B.*)

**Scope and Overall Process:** The SWMS Team recommends a *two-phased approach* to develop watershed plans. A phased approach will enable the County to immediately begin watershed planning using currently available data at minimal cost. It will also allow the County to enhance the quality and sophistication of its plans over time as additional resources become available. The watershed planning process will result in watershed plans for nine major watersheds within the County and support the watershed activities of neighboring Counties where the natural borders of some of the nine watersheds end. When more resources become available to the County, more data collection and analysis followed by the development of more sophisticated and detailed watershed plans will ensue. (For more information on the two-phased approach, see the DOC, Section III.)

**Collaborative Governance Approach:** To provide technical oversight, policy, and public involvement for the watershed management process, a county-wide Stakeholder Steering Committee will be formed to guide implementation of this Declaration of Cooperation, develop watershed plans, and resolve other issues related to watershed management. The Stakeholder Steering Committee may designate subcommittees to specifically resolve issues such as data management and storage, funding, and other

technical matters, which in turn will work with subcommittees designated from BOS Advisory Committees (e.g. WRTAC, etc.). (For more information, see the committee organization chart in Appendix 2.)

**BOS** and Town Council Action Needed: The SWMS Team requests that the Board of Supervisors and Town Councils pass a Resolution of Support for this strategy, which has been developed through the hard work and dedication of a diverse and broadly-representative group of stakeholders.

The following specific actions will result from this Resolution of Support:

- 1) Designation of a Watershed Coordinator or Manager: The Watershed Coordinator or Manager will be responsible for coordinating the County's watershed planning, and will report directly to the County Administrator's Office. The Manager's or Coordinator's responsibilities will include being the contact and liaison between the stakeholder Steering Committee, the staff, and County Administrator's Office.
- 2) Recognition of a county-wide Stakeholder Steering Committee: The SWMS Team will empower the Stakeholder Steering Committee to begin to guide the watershed planning activities and to implement the Declaration of Cooperation. (For more information on the Stakeholder Steering Committee, see the DOC Section V.C.) The Steering Committee may create several key subcommittees that will guide key watershed planning activities, which may include: 1) funding; 2) data management; 3) education and outreach; and 4) technical coordination.

#### Participating Members of the SWMS Team

#### FEDERAL & STATE AGENCIES

Virginia Cooperative Extension - Loudoun Unit: C. Corey Childs Virginia Department of Conservation and Recreation (DCR): Bob Slusser, Mark Aveni

Virginia Department of Environmental Quality: Robert Swanson, Bryant Thomas

Virginia Department of Forestry: Kelley Wagner

Virginia Department of Transportation: Pawan Sarang

Loudoun Soil & Water Conservation District: Jim Christian, Peter Holden, Pat McIlvaine, Chris Van Vlack

U.S. Department of Agriculture, NRCS, FSC, USDA: Larry Wilkinson

U.S. Geological Survey: Mark R. Bennett, Nick Ratcliff (retired)

U.S. Army Corps of Engineer: Stacey Sloan Blersch

U.S. Environmental Protection Agency: Debra Gutenson, Office of Ground Water and Drinking Water; Otto Gutenson, Wetland and Waters Program

#### LOCAL GOVERNMENT

Fairfax County: Matt Meyers

Fairfax Water Authority: Gregory J. Prelewicz, P.E.

Lovettsville: Samuel Finz

Loudoun County Administration: Linda Neri

Loudoun County Board of Supervisors: Sally Kurtz, Stephen Snow Loudoun County Building & Development: Wm. Kelly Baty, Matt Brown, Alex Blackburn, Dennis Cumbie, Laura Edmonds, Ed Erwin, Steve Kayser, William Marsh, Glen Rubis, Todd Taylor

Loudoun County Environmental Health, Environmental Engineering and Policy Development: Robert Lee, James Mackie

Loudoun County Office of Mapping and Geographic Information: Trent Small

Loudoun County Parks and Recreation: Mark Novak

Loudoun County Planning Department: Bruce McGranahan, Joe Gorney, Cindy Keegan

Loudoun County Public Works (General Services, Stormwater): David Ward, Randy Williford

Loudoun County Public Schools: Randy Vlad

Water Resources Technical Advisory Committee (WRTAC): Charlie Faust

#### WATER SUPPLY

Loudoun County Sanitation Authority (LCSA): Todd Danielson

#### **PUBLIC & AGRICULTURAL GROUPS**

Loudoun County Farm Bureau: Chris Hatch, Donna Rogers Farmer: Chip Planck

#### CONSERVATION & ENVIRONMENTAL GROUPS

Audubon Naturalist Society: Cliff Fairweather, Stella Koch Catoctin Scenic River Advisory Committee: Ann Larson Goose Creek Association: Nancy West

Goose Creek Scenic River Advisory Committee: Helen Casey Loudoun Watershed Watch: Darrell Schwalm, Fred Fox Loudoun Wildlife Conservancy: Phil Daley

The Piedmont Environmental Council (PEC): Gem Bingol, Ed Gorski

#### DEVELOPMENT COMMUNITY

Greenvest L.C.: David Snellings

Northern Virginia Building Industry Association: George McGregor

Heavy Construction Contractors Association: Jim Stepahin Luck Stone Corporation: Mark Peterson

Toll Brothers: Bill Hatzer

Wetland Studies and Solutions, Inc. (WSSI): Mark Headly VA Paving Company: Chris Monahan

#### REGIONAL GOVERNMENT

Metropolitan Washington Airports Authority: Michael T. Hackett, Charles Baummer

Metropolitan Washington Council of Governments: John Galli Northern Virginia Regional Commission: Katherine K. Mull

#### **FACILITATION**

Institute for Environmental Negotiation, University of Virginia: Tanya Denckla Cobb, Christine Gyovai, Jason Espie

# Summary of the SWMS Effort

#### I. NEED FOR A COMPREHENSIVE WATERSHED PLAN

Loudoun County is required to meet several state and regional water resource program goals and statutory requirements. These include the Virginia Pollution Discharge Elimination System (VPDES) requirements, the Municipal Separate Storm Sewer System (MS4) requirements, the Total Maximum Daily Load (TMDL) numeric caps and daily limits, Nutrient Load Caps for Wastewater Plants including offset requirements for new and expanded facilities, Nutrient Removal Technology for Wastewater Plant requirements, Water Supply Planning and Drought Management plan requirements to be applied locally or regionally, Virginia Tributary Strategies under the Chesapeake Bay Agreement, and the Virginia Scenic River requirements, among others. The state recommends that local watershed management plans be used as a planning tool by local governments to integrate the requirements of and help meet these requirements. Local watershed plans can also provide a more comprehensive local perspective to the state and regional efforts, as well as enhance these efforts.

The state also advises that it is "critical that both comprehensive plans and zoning proposals are reviewed in the watershed context" (excerpted from Local Watershed Management Planning in Virginia – A Community Water Quality Approach, Virginia Department of Conservation and Recreation). Including watershed management planning in the comprehensive plan improves decision-making. It also helps to avoid costly mistakes and secondary impacts of land use decisions on water and habitat quality.

Loudoun County already has a number of important programs and activities related to watershed management, however, they are not connected efforts. Currently there is no county-wide watershed plan, or no watershed-based plan for managing the County's water resources. The County currently manages its water resources through a variety of programs, but those programs can lack consistent coordination because they are administered through different departments and may be managed on a case-by-case or site-specific basis. Much like the County's Capital Improvement Plan that brings together in one place all of the county needs and priorities for capital improvements, a watershed plan will bring together in one place, for the first time, all of the County's needs and priorities for managing its water resources.

Thus, a watershed management plan will provide the Board of Supervisors with an integrated picture of Loudoun's federal and state obligations for removing pollutants from Loudoun's waters, combined with its priorities for protecting drinking water and preventing pollution of currently clean waters. Bringing all of this information together is essential, particularly as federal and state governments are increasing their mandates relating to water quality and water supply planning. The watershed plan will achieve several goals.

- 1. The plan will provide guidance on a county-wide basis for assessing the current condition of Loudoun's waters; this assessment will identify waters in need of remediation or restoration and those in need of protection from becoming degraded.
- 2. The plan will prioritize the areas needing attention first and create a specific plan of action, based on a set of criteria to be established and a cost-benefit analysis. Actions may include:
  - a. specific on-the-ground stream restoration, stormwater management, or other infrastructure projects;
  - b. policy recommendations to achieve improved protection of Loudoun's waters; and

- c. education, partnership, and implementation projects that will improve citizen involvement in protecting Loudoun's waters.
- 3. The plan will also identify sources of funding and create a strategy for funding watershed plan implementation.
- 4. Implementation of the plan will help create healthy water resources which are economically valuable. Water resource protection activities in agricultural, residential, and urban areas will often provide economic benefits to the landowner, along with the expected environmental benefits. Restoring stream buffers and protecting wetlands, floodplains, and ground water recharge areas will reduce erosion and flooding, as well as maintain the quality and quantity of surface water and groundwater for drinking water supplies.

Further information about the content and nature of a watershed plan may be found in *Appendix 3*.

#### II. BACKGROUND OF SWMS

The Loudoun Strategic Watershed Management Solutions (SWMS) is a collaborative initiative to coordinate existing watershed efforts and define a shared vision for managing Loudoun County's watersheds. A stakeholder group was convened by Loudoun County's Department of Building and Development and facilitated by the University of Virginia's Institute for Environmental Negotiation (IEN). Funding for the project is provided by the National Fish and Wildlife Foundation, U.S. Environmental Protection Agency, and Loudoun County.

During January and February 2006, IEN conducted 17 interviews with stakeholders representing different perspectives and interests about the development of a strategy for watershed planning in Loudoun County. These interviews were conducted in preparation for the first SWMS Team meeting to help shape the agenda, identify the kind of information and speakers needed at the first meeting, inventory activities and studies relevant to Loudoun's watershed planning effort, and identify issues and concerns that would need to be discussed. With this information, IEN developed a summary of its findings as well as an inventory of watershed activities, studies, and sources of data. (Copies of the Summary of the Interviews and meeting summaries may be found in Appendix 5).

The next step in the SWMS initiative was the formation of a stakeholder group called the "SWMS Team." Drawing on recommendations from county staff and a number of stakeholders interviewed during the convening process, over 125 people who represent the interests of federal, state, regional, local government (County and Towns), water supply, environmental and conservation groups, farming, business, development, and homeowner associations were invited to participate. Of those invited, approximately 69 people participated in the four SWMS meetings, February 22-23, March 23-24, May 4, and June 14, 2006, in which decisions were made by consensus.

Through the SWMS meetings and after much deliberation, discussion, and hard work, the Team developed a number of key recommendations regarding the development of a Watershed Plan for Loudoun County. The key areas of agreement developed by the SWMS Team are detailed below in the body of the Declaration of Cooperation (DOC).

The SWMS Team understands that the watershed planning process will need to use an adaptive management approach in which changes in the planning process are made as experience is gained and lessons learned. The agreements reached represent recommendations by the SWMS Team, and it is recognized they may need to be modified to reflect revised timelines or available resources. The Team recommends the establishment of a Steering Committee to provide a mechanism to collaboratively make changes to the recommendations contained in this Declaration of Cooperation.

### **The Loudoun County**

### **Strategic Watershed Management Solutions (SWMS)**

# DECLARATION OF COOPERATION

### **KEY AREAS OF AGREEMENT**

#### III. DOC BACKGROUND

This Declaration of Cooperation (DOC) was created in spring 2006 to serve as a compendium of the recommendations developed by the Loudoun Strategic Watershed Management Solutions (SWMS) Team. The DOC represents significant thought and effort on the part of key stakeholders, and it draws on the lessons learned from other Virginia counties that have already undertaken watershed planning. To reconcile conflicting viewpoints regarding the watershed planning process, Loudoun County staff envisioned the need to bring all key stakeholders together at the outset to create a shared consensus strategy and process for watershed planning that the County and stakeholders, together, could both support. This DOC, as a result, provides consensus parameters and guidance for the watershed planning process. In addition to consensus support for the collaborative approach outlined, as indicated by the signature pages, some SWMS Team members have provided additional specific organizational commitments to the watershed planning process. (Member signatures and commitments may be found in Appendix 4.)

#### IV. GUIDING PRINCIPLES, VISION, VALUES, AND GOALS

The following guiding principles, vision, values, and goals are recommended for a watershed plan for Loudoun County.

- **A.** Principles The following are principles recommended to guide the watershed planning process:
  - 1. Create a realistic, achievable, implementable, balanced plan based on scientific data and models that are accepted by professional scientists in the field.
  - 2. Create a flexible, dynamic, and simple plan.
  - 3. Address resources for implementation in the watershed planning process (monetary, in-kind and staff).
  - 4. Consider economic development, jobs, housing (current and future), agriculture, and conservation land needs in the creation of the plan.
  - 5. Provide a plan based on consensus among the diverse views.
  - 6. Provide a collaborative approach that allows stakeholders to work together to provide support and not duplicate individual efforts or projects.
- **B.** Vision -- The following vision is recommended for Loudoun County's watershed plan:

Loudoun County is a place where natural and cultural resources offer heauty and function. Residents and visitors enjoy clean drinking water, recreate in swimmable and fishable waters, and have access to diverse natural habitats. Loudoun's residents remain informed, energized, and involved in maintaining and protecting healthy watersheds.

- **C. Values** -- The following values are recommended to drive Loudoun County's watershed planning effort and to meet the needs of future generations:
  - 1. Affordable and clean drinking water is always available for all Loudoun citizens.
  - 2. Economic development activities are sensitive to watershed functions and health.
  - 3. Nature and natural systems that are essential for stream health exist in all Loudoun watersheds.
  - 4. Stewardship is recognized as a community responsibility and encouraged.
  - 5. Recreational use of accessible water resources is available for all Loudoun citizens.
  - 6. Healthy stream habitats and aquatic ecosystems are protected in all Loudoun streams.
  - 7. Watershed planning and management is sensitive to the needs of agricultural production, including adequate water supplies, and the continued viability of the County's agricultural heritage as a means of food security and economic growth.
  - 8. All Loudoun citizens remain engaged, informed, and active in watershed planning, expressing the holistic concept of community responsibility.
- **D. Goals** -- The following broad goals are recommended for Loudoun County's watershed planning effort:
  - 1. Protect public health and the environment.
  - 2. Manage groundwater and surface water supply for current and future demands through private and public means.
  - 3. Manage stormwater runoff in accordance with best management practices to protect stream channel processes and to preserve and restore water quality, stream health, and groundwater recharge.
  - 4. Protect, provide, and restore diverse habitats and riparian buffers to provide healthy streams and public recreation opportunities.
  - 5. Preserve the economic value of healthy watersheds by providing the natural functions of watersheds including wetlands and floodplains.
  - 6. Engage citizens in watershed planning efforts, raise their awareness of Loudoun's watersheds, and utilize citizen input in all watershed matters.
  - 7. Effect cooperation and coordination between government and non-government watershed management efforts, data collection, and resources within the watersheds.

# V. SCOPE AND OVERALL PROCESS FOR LOUDOUN WATERSHED PLANNING

- **A.** Two-Phased Approach -- The SWMS Team recommends a two-phased approach to develop watershed plans. This phased approach will enable the County to immediately begin watershed planning using currently available data at a minimum cost. It will also allow the County to enhance the quality and sophistication of its plans over time as grants and other funding becomes available.
- **B.** Phase I -- Watershed management planning can proceed immediately using already acquired or existing data in a cost-effective manner. In this phase, three different types of plans are recommended in recognition of the different scope and scale of legal requirements and needs for

watershed planning. All three should be developed in parallel, at the same time, using currently existing data beginning as soon as practicable.

- 1. **Tier I: Regional Plan**: Loudoun County watersheds extend into adjoining counties, and are part of the larger Chesapeake Bay Watershed. It is recommended that a Regional Watershed Plan defined by the geographic boundaries of the watersheds be developed in cooperation with neighboring jurisdictions and regional authorities (e.g. Fairfax, Prince William, and Fauquier).
- 2. **Tier II: Major Watershed Plans**: Individual Watershed Management Plans that are defined by both the political boundaries of the County and watershed boundaries are recommended to be developed for the nine major watersheds and areas that drain directly to the Potomac, (i.e., Direct Watershed to the Potomac). These plans will involve working with stakeholders within those watersheds, and providing communication and coordination regarding those plans at the county-wide level. Individual watershed management plans using existing data should be developed for: (1) Sugarland Run and Broad Run, (2) Bull Run, (3) Beaverdam Creek and Lower Goose Creek (4) Upper Goose Creek, (5) Limestone Branch and Clarks Run, (6) Catoctin Creek, (7) Dutchman's Creek and Quarter Branch, (8) Piney Run, and (9) Cub Run.
- 3. **Tier III: Subwatershed Implementation Plans**: Preliminary Subwatershed Implementation Plans should be developed as supplements to each of the major watershed plans. The subwatershed plans should be defined by both subwatershed boundaries and characterization of the subwatershed. Each subwatershed plan will provide implementation strategies to protect and restore the water quality and stream health in specific portions of the watershed. The order in which these supplemental plans are developed should be based on a prioritization system that selects the "most vulnerable" watersheds first, with preference given to headwater subwatersheds, drinking water sources, and vulnerability potential.
- 4. **Modeling** In Phase I, the County will begin its watershed planning with the least-cost predictive tools that do not require data beyond what is already available, that are simple, and can be used in-house by Loudoun County staff. For predicting impacts of different management options on water quality and quantity, the County will consider basic spreadsheet models. For ground water quality and quantity, the models can offer predictive guidance for nonpoint source pollution and base flow. Questions regarding ground water availability are more difficult to quantify with ground water models and require a good conceptual understanding of the ground water flow system of the area being studied. In Phase I, the County will focus on developing a conceptual understanding of the groundwater flow system. (For further guidance on modeling, see Appendix 1).
- C. Phase II More sophisticated watershed management plans can be developed when County or other resources are available to collect and analyze additional data, based on established priorities. The data collection could focus on: (1) filling identified data gaps; (2) developing sophisticated predictive models to assess degradation impacts under varying loading and growth conditions (see Section IV below); (3) developing detailed subwatershed implementation plans based on stream surveys; and (4) assessing progress in achieving planning goals based on water quality and stream health data collected under probability and trend monitoring approaches.
  - 1. **Detailed Field Surveys** -- Additional field surveys should be conducted in each subwatershed to provide updated and more detailed data. These detailed field surveys should be used to assess the pathways of runoff to streams, hydrological impacts of increased runoff, impacts on aquatic life, and impacts on habitat.

- **2. Updated Implementation Plans** -- The field survey results can be used to revise the preliminary subwatershed implementation plans into more detailed, long-term implementation plans.
- 3. **Modeling** -- As the County progresses in its Watershed Management Planning effort, it may need more sophisticated predictive capability. When more data are gathered and become available, the County should consider more complex modeling methodologies to predict the impact of proposed management strategies on water quality, quantity, and groundwater. More complex modeling may require additional funding and staffing capacity to accomplish. (For further guidance on modeling, see Appendix 1.)
- D. Collaborative Governance Approach A broadly representative and balanced county-wide Stakeholder Steering Committee will be established to provide policy and technical recommendations to the Board of Supervisors. The Stakeholder Steering Committee will guide implementation of this Declaration of Cooperation and ensure that an "adaptive management" approach is used to make changes to the watershed planning process as experience is gained and lessons learned. Technical subcommittees will be established to provide input and guidance to the Stakeholder Steering Committee and County as needed. The SWMS Team also recommends establishing subwatershed committees, if needed, with liaisons from the subwatershed committees serving on the county-wide Stakeholder Steering Committee. (For the Stakeholder Steering Committee composition, organizational structure, and communication structure, see Appendix 2.)

#### VI. MODELING

- **A. Decision-Making Tool** -- Computer modeling can be a helpful decision-making tool for the watershed planning process. It can be used to forecast the impact of different management strategies, and therefore help in the selection of preferred management practices. The principal use envisioned for modeling in the Loudoun watershed planning process is to provide better information for decisions regarding water quality and water quantity (water supply planning) for both surface and ground water. (For further guidance on modeling, see Appendix I.)
  - 1. **Surface Water Modeling** -- For surface water quality and quantity, the models can offer predictive guidance for aquatic, drinking, and recreational values of streams, specifically addressing at least sediment, nutrients, and flow variation ("flashiness").
  - 2. **Ground Water Modeling** -- For ground water quality and quantity, the models can offer predictive guidance for nonpoint source pollution, base flow, and water supplies and will help develop a conceptual understanding of the groundwater system.
  - 3. **Modeling Choices** -- The Team recognizes that there are a wide range of models available that can vary greatly in cost, complexity, ease of application, and ability to use in-house. In light of this, the Team recommends that the County adopt a phased approach, as described above. In addition, the Team recommends that the modeling information be shared with the public in an accessible and understandable format, such as through the Internet.

#### VII. DATA MANAGEMENT AND PROTOCOLS

**A. Current Data Availability --** Data are a major component of the watershed plan, and there is a need for more attention and resources to be directed to data management and acquisition. The SWMS Team agrees that data and studies currently available are sufficient to provide the initial prioritization and snapshot assessment envisioned in Phase I of the proposed Scope of watershed planning. However, the SWMS Team recommends that the integrity of existing data be examined

carefully before using it in any assessment as not all existing data are relevant to the assessment's purpose, and some are old or perhaps faulty.

- **B. Central Database and Data Coordinator/ Office** -- A common database needs to be created to store water quality and quantity data from the many data collection entities working in the County. It is important that there be one data "coordinator" or management focal point that assembles data and establishes standard data collection and management protocols. The Team also recommends that the Steering Committee coordinate with the data coordinator or manager about the data needs identified by the Water Resources Technical Advisory Committee (WRTAC).
- **C. Monitoring --** A combination of monitoring approaches is needed. One approach, suggested for use during Phase I of the Scope, is to use probabilistic-based (statistical) monitoring, applied Countywide to provide baseline, and snapshot data on watershed conditions for tracking progress. Another important approach, suggested for Phase II of the Scope, is to establish an on-going system of permanent monitoring stations to monitor progress over time. Lastly, the SWMS Team recommends analyzing and reporting monitoring data on a periodic basis to ensure relevant data are being collected.
- **D. Stream Survey Data --** Stream surveys will eventually be needed to develop data needed for detailed implementation plans to protect or restore priority stream segments identified in subwatershed plans.
- **E. Data Collection Needs --** It is important that a number of data and stream quality studies be incorporated into the assessment and watershed characterization effort. There is a need to decide how to quickly gather and assess these existing data for use in the county-wide assessment based on costs and the needs listed below. All new data collection should follow data collection protocols used by existing studies, or State-endorsed monitoring guidelines.
  - 1. The County should consider making a commitment to inventory, map and monitor all water resources within the County's watersheds.
  - 2. There is a need to establish a network of on-going monitoring stations to supplement the county-wide assessment and subwatershed characterization and to assist with the evaluation and updating of the Watershed Plans over the years.
  - **3.** A flow gauging network should be established to help monitor in-stream flow because maintaining ecologically healthy streams is a concern for the future of Loudoun's waterways.
  - **4.** GIS data needs to be incorporated into the Watershed Management Planning effort. Surface and ground water quality and quantity data, wetlands data, and other data as appropriate needs to be incorporated into the County GIS system and the County base maps.
- **a. Protocols** The Steering Committee or its subcommittees may adopt standards and protocols for data collection, analysis, and reporting as the need arises.

# VIII. CRITERIA FOR PRIORITIZING PROBLEMS AND THE DEVELOPMENT OF SUBWATERSHED PLANS

**A. Need for Criteria** -- The SWMS Team agreed that it is important to establish county-wide prioritization criteria to guide the watershed planning effort. Specifically, prioritization criteria should help identify which subwatershed Plans are developed first and where implementation should first be initiated. It is understood that any plan should be implemented incrementally so that identified priority areas can be addressed first.

- **B. Criteria Guidelines** -- The Team identified the following list of criteria for priority determination. They are not ordered and not given weight.
  - Rectify pre-existing and ineffective stormwater management controls.
  - Protect drinking source water.
  - Protect drinking water supply recharge areas.
  - Fulfill state and federal regulation requirements.
  - Protect waters in development-pressure areas, or areas on the cusp of change for future build-out.
  - Protect sensitive areas, such as headwaters, groundwater recharge areas, and wetlands.
  - Protect human health, particularly situations arising from possible septic or groundwater contamination.
  - Take into account the different characterizations amongst sub-watersheds such as size, urban, rural, east, west, soil type, farming, drinking water supply shed, etc.
  - Protect undeveloped or minimally developed subwatersheds.
  - Implement projects that are the most efficient and offer the greatest potential for efficient reduction of nutrients.

#### IX. FUNDING

- **A. Funding Strategy** -- Funding is a critical part of the watershed planning process, and the Team's recommendation for a funding strategy for the watershed planning process is below. In addition, the Team developed a list of potential sources of funding and principles to consider when seeking funding, and other related information. This information may be found in the March 2006 SWMS meeting summary.
- **B. Dedicated Funding** -- The Team emphasizes the need for a dedicated source of funding for watershed planning from within the County. There are many potential benefits from watershed planning, such as being aware, proactive and prepared for new stormwater and nutrient cap regulations that are forthcoming. (See Section I, "Need for a Comprehensive Watershed Plan," page 3.)

  Creating a dedicated source of funding is important to ensure a successful watershed planning effort to help meet new State and Federal regulatory compliance requirements.
- **C. Grant Funding --** Consider identifying sources of grant funding and corporate sponsorship for both a short-term and long-term source of funding for watershed planning, but especially in the short-term while a long-term funding strategy is being created. The SWMS Team recognizes that significant staff time is required to write and administer grants.
- **D. Targeted Funding --** Consider developing sources of funding for critical areas identified in the watershed plan. In addition, consider phases in watershed planning when looking for and dedicating sources of funding, as fewer financial resources may be needed for Phase I than Phase II.
- **E. Existing Funding --** Evaluate, prioritize, and possibly reallocate existing funding resources to determine if those resources could be applied to watershed planning.
- **F. Bay Act Funding --** Consider the possibility of Loudoun County adopting the Chesapeake Bay Preservation Act (CBPA), which may be a potential source of funding. However, there could be regulatory implications that could require careful consideration.

**G. In-kind --** Consider significant financial contributions from in-kind sources such as citizen groups and the development community.

# X. STAKEHOLDER/ CITIZEN INVOLVEMENT IN THE WATERSHED PLANNING EFFORT

- **A. Valuing Outcomes** -- The SWMS Team agreed that the success of watershed management planning in Loudoun County ultimately depends on people valuing the outcomes and contributing to the watershed plan implementation activities. The planning process should therefore involve people in the development of the Watershed Management Plans to enhance the Plan's value to citizens.
- **B. Engaging Citizens** -- Overall, the Team agreed that it is essential for the planning process to create ways that make it easy for Loudoun citizens to be informed, engaged and involved. Ideas include having planning leaders attend meetings of different citizens' groups to reach citizens who might be difficult to reach otherwise, creating a website, conducting workshops, creating other forums to engage citizens, and providing educational resources to the public. It is important to "go beyond the choir" to engage citizens who might not otherwise be involved in the watershed planning process and Plan implementation. Outreach strategies also need to ensure that actual implementation strategies are accessible to people of all socio-economic levels.
- **C. Methods to Involve Stakeholders** -- To ensure stakeholder involvement throughout planning and implementation, the Team recommends that the County adopt the following approaches:
  - 1. Create an inventory of County organizations that are stakeholders in the watershed plan, i.e., organizations whose work or mission relates to the goals of the watershed plan, including conservation and environmental interests, historic preservation, parks and recreation, development, business, and agriculture. The SWMS participant list may be used as an initial document for this inventory.
  - 2. Convene or support a county-wide Stakeholder Steering Committee with representation of diverse interests to help guide the county-wide Watershed Management Planning process as previously outlined in Section V.D. This committee should include liaisons from watershed groups as well as resource people and Loudoun County staff.
  - **3.** Seek guidance from the county-wide Stakeholder Steering Committee and remain flexible in determining, for each individual watershed planning effort, the form of citizen involvement that is most appropriate for that watershed (e.g., stakeholder committees, task forces, *ad hoc* groups, focus groups, workshops, forums, presentations to homeowner associations (HOAs), etc.).
  - 4. Consider using existing stakeholder groups (e.g., Loudoun Watershed Watch, Northern Virginia Building Industry Association, Soil and Water Conservation District, etc.) as forums to enlist citizen engagement in the Watershed Management Planning effort.
  - **5.** Involve schools and students, and use the schools as a forum to involve citizen in the planning process.
  - **6.** Recognize that parks and streamside trails are valued community resources that can be used to engage citizens in watershed management.
  - 7. Consider using citizen volunteers to conduct some of the public education and outreach initiatives during the planning process to relieve the burden on County staff and to engage citizens in working with their neighbors.

#### XI. EDUCATION

- **A.** Informed Citizenry -- The watershed planning process should include a strong education component to create a more informed citizenry and to raise the awareness of citizens regarding watershed management needs. Further, the educational component should be designed not only for the Plan but also for its implementation.
- **B. Strategies** -- The SWMS Team provides the following recommendations and guidelines for the County's outreach and education efforts.
  - Use existing education/outreach programs to avoid 'recreating the wheel'.
  - Education and outreach efforts should stay independent of the political arena.
  - Provide all on-site wastewater treatment system owners with knowledge about monitoring and maintaining septic systems.
  - Use stream valley parks as a venue for education and outreach.
  - Use education and outreach efforts to raise awareness of existing regulations and the need for compliance.
  - Involve the schools and students in the Watershed Management Planning process.

#### XII. POLICY AND REGULATIONS

- **A. Guidelines Regarding Policies and Regulations** -- The SWMS Team agreed on the following guidelines for addressing policies and regulations in the Plan.
  - 1. Measures to protect watershed health will be integrated into the County's planning and regulatory documents, including the <u>Revised General Plan</u>, <u>Countywide Transportation Plan</u>, <u>Zoning Ordinance</u>, and the <u>Facilities Standards Manual</u>. County planning and regulatory documents should further the health and viability of County watersheds with particular attention to adequate water supplies, good water quality, healthy riparian corridors, erosion and sediment control, and healthy stream flows.
  - 2. The Stormwater permitting program is still under development, and other programs will need to be used in conjunction with the Stormwater program for addressing watershed problems.
  - 3. Watershed planning strategies should be mindful of Virginia's Dillon Rule legal framework. Legal or other expert opinions should be obtained when possible to resolve or clarify differing interpretations, such as inconsistent interpretations of court rulings. For instance, it would be helpful to obtain clarification about alternative septic systems, as there are different approaches being taken in Clarke and Fauquier Counties.
  - **4.** The Plan should incorporate and address the TMDL regulations and guidelines of the Virginia Department of Environmental Quality and Department of Conservation and Recreation.
- **B. Guidelines for Handling Issues** -- The SWMS Team agreed on the following guidelines for how to handle issues that arise during the watershed planning process that could impact policies and regulations. Some policy recommendations may apply to only one of the County's watersheds, while others may apply to the entire county.

- 1. Those policy recommendations that are applicable to the entire county should be lifted out of the individual watershed planning efforts, and placed on a separate and faster track for consideration by the Board of Supervisors (BOS), so that policy recommendations are not on hold while the remainder of that watershed plan is being finished.
- 2. Recommendations for policy changes should be fed into the General Plan as proposed amendments and, where applicable, as amendments to the <u>Zoning Ordinance</u> and <u>Facilities Standards Manual</u> (FSM).

#### XIII. COORDINATION OF COUNTY AUTHORITIES

- **A. Coordination Strategies** -- Creating easy and efficient mechanisms for internal County coordination during the planning process and Plan implementation will be essential for success. Watershed planning is complex, involving multiple sources of data, multiple skill sets, and multiple County departments. To accomplish this goal, the SWMS Team recommends the following strategies.
  - 1. **Designate Watershed Manager/Coordinator --** The BOS should designate through County Administration where leadership for watershed management coordination will reside, a critical factor for effective coordination.
    - **a.** In the short-term, for the purposes of the watershed planning effort, the SWMS Team recommends that the BOS designate either an existing Department or the Environmental Coordinator as the lead for the watershed planning effort.
    - **b.** For the long-term, if needed to fulfill the requirements of the Chesapeake Bay Agreement, the SWMS Team urges the BOS to consider the creation of an Environmental Services Department in its long-term planning for County staff.

#### XIV. INVOLVEMENT OF COUNTY DECISION-MAKERS

- **A. BOS** and Town Representation -- The SWMS Team recommends that the BOS and incorporated Towns either (in order of preference) attend, have representation, or be regularly informed during the watershed planning process. Additionally, the Planning Commission (PC) should be given the opportunity to participate and at a minimum should be kept informed throughout the process.
- **B. Progress Reports** -- The SWMS Team recommends that presentations should be made to the following decision-making bodies throughout the watershed management planning process, in consultation with one or two Supervisors as appropriate. Presentations should reflect high-level County Administration support by having the presentations opened by the County Administrator with technical information provided by the Environmental Coordinator or watershed planning program manager, as appropriate.
  - 1. The Board of Supervisors;
  - 2. The Planning Commission; and
  - **3.** Incorporated towns (the Coalition of Loudoun Towns (COLT) may be an appropriate venue for these presentations, and it may also be appropriate to provide presentations to joint meetings of Town Councils and Planning Commissions).

#### XV. IMPLEMENTATION OF THE PLAN

- **A. Authority for Implementation** -- The Plan should specify and clarify who will implement each component of the Plan, provide a projected completion date, and designate who has authority for implementation.
- **B. Coordination with Towns** -- The County will coordinate with the Towns and enlist their participation in watershed management planning and implementation.
- **C. Public-Private Partners** -- It is important for the County to work with and encourage its private sector partners to continue their ongoing activities in the watersheds throughout both the planning and implementation phases of the watershed management planning process.
- **D.** Implementation Steering Committee -- The SWMS team recommends that the county-wide Stakeholder Steering Committee be continued or transition its membership after completion of the Plan to ensure continuing citizen involvement in monitoring and assisting with implementation.

#### XVI. IMPLEMENTATION OF THE DOC

The SWMS Team recommends that on conclusion of its work, this Declaration of Cooperation be presented to the BOS and incorporated Towns for their review and approval. It should be presented to the Planning Commission and committees listed above (WRTAC, COLT) for their information.

#### XVII. Evaluation of the Watershed Plan

The SWMS Team agrees that the Watershed Plans should include a strategy for revisiting and updating the Plans over time to ensure that they remain living documents. These plan reviews should be conducted by the County in collaboration with the county-wide Stakeholder Steering Committee. An important component for assessing progress in achieving planning goals will be the water quality and stream health data collected under probability and trend monitoring approaches.

# **APPENDIX 1**

#### MODELING

#### **Further Information and Guidance**

#### MODELING FOR WATERSHED PLANNING: PHASE I

- 1. Water Quality -- For predicting impacts of different management options on water quality, consider selecting either a basic spreadsheet (such as STEPL) or the slightly more sophisticated Generalized Watershed Loading Function (GWLF) model, both of which will address nitrogen, phosphorous, and sediment. Experience in other localities has shown it is important that whichever model the County selects, the same model be applied across the entire County to ensure consistency of analysis and predictive value.
- 2. Water Quantity -- For predicting impacts of different management options on water quantity, consider selecting a spreadsheet model to do "water balance accounting." It is understood that this would allow the County to make only rough predictive calculations of impacts on water quantity at an early phase of watershed planning. However, as more data is gathered over time, the County may be able to graduate to a more refined model to make more refined calculations.
- 3. **Ground Water** -- For ground water quality and quantity, the models can offer predictive guidance for nonpoint source pollution and base flow. For predicting impacts of different management options on groundwater, it is recommended that existing data are compiled and analyzed, as much data is already available but has not been analyzed. It is also important that existing data and analyses already undertaken by agencies such as the USGS and DEQ be obtained by the County to avoid duplication of effort. The USGS has agreed to provide input and assistance in the County's modeling and data synchronization efforts. Questions regarding ground water availability are more difficult to quantify with ground water models and require a good conceptual understanding of the groundwater flow system of the area being studied. In Phase I, the County will focus on developing a conceptual understanding of the groundwater flow system.
- 4. **Floodplains** -- For predicting impacts of different management options on floodplains, consider obtaining existing modeling from FEMA to incorporate into the plan.

#### MODELING FOR WATERSHED PLANNING: PHASE II

1. Water Quality and Quantity -- For more sophisticated predictions of impacts of different management options on both water quality and quantity, the County should first inventory data available to decide which of the more sophisticated models would be most feasible to use. The current choices are either EPA's dynamic rainfall-runoff simulation model (SWMM) or the Hydrologic Simulation Program-Fortran model (HSPF). Both models are appropriate for Loudoun's mix of urban/rural land use, and could be used to predict nutrients, sediments, as well as flow variation and base flow. The HSPF model already has been used to develop two TMDLs for fecal coliform in Loudoun County, and so could be adapted for these broader predictive purposes as well as expanded to provide coverage for the entire County via extrapolation. As a result, the Team suggests that the HSPF might be preferable to the SWMM model, but the County should make this determination when the time is appropriate. The Team

- also suggests the County consider using a flexible, selective approach in which more sophisticated models would be used for more complex, difficult watersheds.
- 2. Ground Water -- For more sophisticated predictions of impacts of different management options on ground water, the County needs to establish long-term monitoring wells and gauges. When more data becomes available, including geological data, the County could begin to conceptualize its ground water system. The Team recognizes that the movement and availability of ground water is a difficult science, and that it will be at least five years before the a predictive model for ground water can be developed. It is therefore suggested that other tools for decision-making be developed in the near-term. Specifically, the Team recommends that the County consider selecting either the MOD-FLOW or SUTRA 3-D models for use as early as possible in Phase II. Either of these tools can be used to identify: (a) areas at risk of low base flow; and (b) areas important for ground water recharge.

#### MODELING FOR WATERSHED PLANNING: PHASE III

For groundwater, the Team also recommends a later Phase III modeling effort in which the County would eventually develop and use a ground water model that can provide better predictive capability for the availability of groundwater.

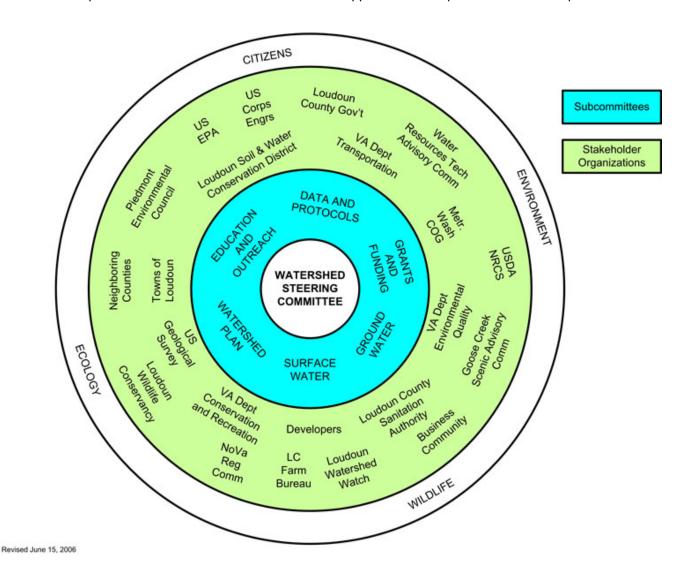
### **APPENDIX 2**

# **Stakeholder Steering Committee**

## Proposed Composition and Organizational and Communication Structures

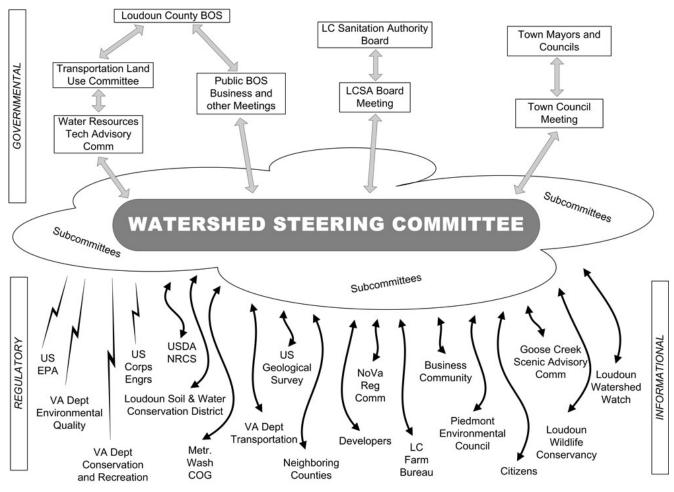
#### **Organization Chart**

The Watershed Steering Committee is the central core of the watershed management strategy organization. The subcommittees provide the Steering Committee with technical findings and strategic analysis and perspective. The names and composition of the subcommittees may change at the discretion of the Steering Committee. Stakeholder organizations are engaged through the subcommittee process to address watershed issues and support the development of watershed plan.



#### **Communication Chart**

Watershed Steering Committee communications include: governmental, informational and regulatory. Formal bidirectional governmental communication includes public meeting process as well as direct communication to elected officials of the government entities. Two avenues are available to communicate between the Loudoun County Board of Supervisors.



Revised June 14, 2006

*Note*: The lightening bolts reflect a Federal or State regulatory relationship between an agency and the Steering Committee. The curvy lines represent more informal communicative channels.

# **APPENDIX 3**

### **Watershed Planning Reference Resources**

- 1) CCWRA. 2002. Watersheds: An Integrated Water Resources Plan for Chester County, PA in Landscapes. Chester County Water Resources Authority.
- 2) CWP. 2000. The Practice of Watershed Protection: Techniques for Protecting Our Nation's Stream, Lakes, Rivers, and Estuaries. The Center for Watershed Protection, Ellicott City, MD.
- 3) DCR. 2004. Local Watershed Management Planning in Virginia: A Community Water Quality Approach. The Virginia Department of Conservation and Recreation, Richmond, Virginia.
- 4) LCSA. 2003. Goose Creek Source Water Protection Program. Loudoun County Sanitation Authority.
- 5) LWW and LWC. 2005. State of the Streams: A Water Quality Assessment. Loudoun Watershed Watch and Loudoun Wildlife Conservancy USEPA. 2005.
- 6) MWCOG. 2003. Loudoun County Baseline Biological Monitoring Survey (2000-2002), Phase I: Broad Run, Goose Creek, Limestone Branch, Catoctin Creek, Dutchman Creek, and Piney Run Mainstem Conditions. Metropolitan Washington Council of Governments, Department of Environmental Programs, Washington, DC.
- 7) USEPA. 2005. EPA 841-B-05-005. *Draft Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 8) USEPA. 2004. *Protecting Water Resources with Smart Growth*. EPA 231-R-04-002. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 9) USEPA. 2005. National Management Measures to Control Non Point Source Pollution from Urban Areas. EPA 841-B-05-004. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 10) USEPA. 2006. Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies. EPA 230-R-06-001. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 11) Using Smart Growth Techniques as Stormwater Management Practices. EPA 231-B-05-002. U.S Environmental Protection Agency, Office of Water, Washington, DC.

# **APPENDIX 4**

# Signature Pages and Specific Organizational Commitments

Ordered Alphabetically by Organization or Last Name of Individual

# **Individual Commitments by SWMS Team Members**

The Audubon Naturalist Society will continue to support volunteer water quality monitoring activities in Loudoun County through monitor training, monitoring equipment, storage, and technical guidance. We will also participate in local watershed education activities such as stream walks and slide presentations.

NAME, TITLE Rus & Nature Sanctuary

Date

Submitted by Cliff Fairweather

#### Signatory Page for Participating Members of the SWMS Team June 14, 2006

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

I participated with other stakeholders in developing a consensus strategy for guiding Loudoun County's watershed planning, as expressed in the Declaration of Cooperation.

I support formation of a stakeholder Watershed Planning Stakeholder Steering Committee as the most effective watershed management structure to guide the development of Loudoun's watershed and subwatershed plans.

I support a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

YOUR NAME PRINTED

Date

YOUR NAME SIGNED

Your Organization Printed (Only If appropriate)

### Signatory Page for Participating Members of the SWMS Team

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I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planting Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

March R. Brown

clinton

Mark R. Bennett

Date

USGS Virginia Water Science Center

# Signatory Page for Participating Members of the SWMS Team

#### DRAFT 5/26/06

SWMS TEAM MEMBERS: Please determine if your organization can sign this. If it is too difficult or inappropriate for your organization to formally sign this statement, then we would ask you to sign this individually, just representing yourself as a participant in the process, using the OPTIONAL paragraph below.

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Philip Daley, representative

Londour Wildlife Conservancy

Date (June 14, 2006)

The Loudoun Wildlife Conservancy (LWC), the largest non-affiliated, all-volunteer conservation tion in Loudoun County, commits to support SWMS in the following areas:

- A. Data, study or resource: LWC volunteers will collect data on streams and sites throughout the County. Data includes: number and types of benthic macro-invertebrates, ambient water and air temperatures, PH, Habitat assessments, watershed land use and human impacts. Data will be made available to SWMS members through cooperation with LWW.
- B. Education, outreach or project: LWC will: a. Provide knowledgeable volunteers to assist schools, scout groups or other organizations, for education on water quality and stream habitat/assessment issues; b. Provide programs and training to volunteers and interested groups on stream monitoring techniques; c. Develop and publish articles regarding stream quality in our quarterly newsletter, The Habitat Herald; d. Participate in stream/watershed education efforts/initiatives of other groups/agencies (LWW, LSWCD, LCSA, etc.) e. Provide volunteers and other resources for riparian restoration projects. f. Identify trends in water quality and stream health to educate the general public. g. Compile and analyze collected data and provide summary information to LWC monitors and the general public. h. Provide educational materials on water quality, stream health, pollution prevention and environmental stewardship.
- C. Land Use Planning and Policy: LWC will provide advice/input to County BOS, Planning Commission, staff, and Landowners regarding the importance of, and need for, protecting stream corridors and floodplains for the benefits of wildlife and human passive recreation.
- D. Stream Monitoring: LWC will continue to provide a cadre of trained volunteers for stream monitoring in accordance with a modified EPA Rapid Bioasessment II, or other approved methodology. LWC also commits to expanding its program to include other parameters and locations when time, training and funding permit. Our commitment includes: a. Recruitment and training of team leaders and citizen volunteers. b. Providing and maintaining stream quality equipment and supplies. c. Collecting data that includes physical, chemical, biological, habitat parameters and land use activities. d. Develop, implement and maintain an approved quality assurance program.

Nicole Hamilton, President, LWC	Date
(See signature page above)	
Philip Daley, LWC's SWMS Rep	<b>Date</b>

#### Virginia Department of Environmental Quality -- Northern Virginia Regional Office

The Virginia Department of Environmental Quality (DEQ) supports the development of a strategic plan for watershed management as envisioned by the Loudoun County Strategy for Watershed Management Solutions (SWMS) participants. The Department recognizes the future challenges that project stakeholders face in the development and implementation of a watershed management plan that works to improve regional water quality in Loudoun County.

In the spirit of collaboration and cooperation, the Northern Virginia Regional Office of the DEQ offers to support the project in the following manner, granted that Commonwealth resources allow for such commitments:

- Provide available water quality data to the team as may be needed in support of defining baseline ambient stream conditions;
- Participate as needed or requested in future meetings of the partnership;
- Conduct and electronically publish Total Maximum Daily Load studies initiated for streams to attain water quality standards;
- Assist in educational outreach efforts designed to engage members of the community to meet project goals and to market the program;

Offer any other appropriate technical assistance in support of the project.

Regional Director

Virginia DEO Northern Regional Office

6-12-2006

Date

26

### Signatory Page for Participating Members of the SWMS Team

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

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I support a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

Christopher L. P. Hatch (Please sign above)

Loudown County Farm Bureau, Inc.

\_\_\_\_\_

Date (June 14, 2006)

#### The Goose Creek Association will provide:

- Baseline stream monitoring information, both biological and chemical, for current locations on the Goose Creek and Little River. Additional sites may be added.
- Education Outreach Programs, independently or in conjunction with other conservation organizations such as the Piedmont Environmental Council or Loudoun Watershed Watch, to inform citizens of Best Management Practices to maintain the health of the watershed.

NAME, TITLE Date

Submitted by Nancy West, Goose Creek Association

#### Signatory Page for Participating Members of the SWMS Team

#### DRAFT 5/26/06

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Date (June 14, 2006)

Goose Creek Association

The Goose Creek Scenic River Advisory Committee (GCSRAC) fully supports the Loudoun Strategic Watershed Management Solutions (SWMS) initiative to coordinate the many diverse watershed stakeholders in Loudoun County in order to effect a coordinated County-wide program to protect this watershed and insure its future life and potability.

To that end the Goose Creek Scenic River Advisory Committee will commit to offering its support to establishing a meaningful county program that protects and enhances the watershed.

In our work, the Goose Creek Scenic River Advisory Committee will continue to work with riparian landowners along Goose Creek to establish riparian setbacks and other water cleansing methods to protect the water.

Where possible we will also commit to educating the public in good water husbandry. We will also continue to work with SWMS as necessary and support testimony before the County Planning Commission and/or County Board of Supervisors in order to create a meaningful new county ordinance to protect Loudoun's waters for the future.

Melen & Cassey

6-14-6

NAME, TITLE

Date

Submitted by Helen Casey

#### Signatory Page for Participating Members of the SWMS Team June 14, 2006

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Helen E. Casey

YOUR NAME PRINTED

6-14-6

Date

YOUR NAME SIGNED

Helen E. Carry

Strase breek Seenie River advisory Committee

Your Organization Printed (Only If appropriate)

#### Signatory Page for Participating Members of the SWMS Team June 14, 2006

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I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

This statement of support represents my individual views as a participant in the SWMS Team and does not necessarily represent my organization's official position or represent a commitment of my organization's resources. If my organization is able to make an official commitment of resources to the Loudoun watershed planning effort, a specific Declaration of Commitment is attached.

YOUR NAME PRINTED

YOUR NAME SIGNED

Your Organization Printed (Only If appropriate)

Loudoun County Department of General Services – Public Works Division commits to support SWMS efforts by performing stormwater management functions outlined in the General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4) and declared as General Services Department responsibilities in the Loudoun County VPDES Phase II Stormwater Management Plan and Chapter 1096 of the Codified Ordinances of Loudoun County.

#### These functions include:

- Surveying and mapping the storm sewer system in Eastern Loudoun County and keeping it updated.
- Mapping VPDES major outfalls and identifying receiving streams to which they discharge.
- 3. Developing and enforcing an Illicit Discharge Detection and Elimination program.
- Developing and enforcing a BMP maintenance program requiring annual maintenance reports or County maintenance in accordance with executed agreements.
- Maintaining and repairing stormwater infrastructure to meet its original design capability.

The Department will also keep other County departments, which are involved in the VPDES Permit, apprised of their responsibilities and, in some cases, assist them in complying with the six minimum control measures which include:

- 1. Public Education and Outreach on Stormwater Impacts
- 2. Public Involvement/Participation
- 3. Illicit Discharge Detection and Elimination
- 4. Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management in New Development and Redevelopment
- 6. Pollution Prevention/Good Housekeeping for Municipal Operations

Finally, the Department will ensure the completion of the VPDES Annual Reports detailing the progress of the program.

6/14/06 Date

Randall I Willifed

Chief, Stormwater Management

#### Signatory Page for Participating Members of the SWMS Team June 14, 2006

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YOUR NAME PRINTED Date

lectry

YOUR NAME SIGNED

Loudour County Sonitation Authority

Your Organization Printed (Only If appropriate)



#### LOUDOUN SOIL AND WATER CONSERVATION DISTRICT

30 Catoctin Circle, SE, Suite H, Leesburg, VA 20175 (703) 777-2075 / (703) 771-8395

June 7, 2006

The Loudoun Soil and Water Conservation District (LSWCD) is a political subdivision of the Commonwealth of Virginia managed by a local Board of Directors. The LSWCD welcomes the opportunity to work with the Loudoun County Strategic Watershed Management Solutions (SWMS) Committee in the development of an effective plan for watershed management.

#### The LSWCD will:

- a.) work with Federal (EPA, Army Corps of Engineers, USDA-NRCS), State (DCR, DEQ, VDOF, VGIF, VCE), and local authorities (Loudoun County Government, MWCOG, Potomac Council) and the private sector to address Loudoun County's soil and water conservation needs;
- b.) provide technical and financial assistance to landowners for the implementation of the Virginia Agricultural BMP (Best Management Practices) Cost-Share and Tax Credit Programs and the agricultural component of the Catoctin Creek TMDL Agricultural Implementation Plan;
- c.) continue to monitor Loudoun County's streams as appropriate and as resources allow;
- d.) continue to provide conservation education programs to youth and adults;
- e.) provide technical assistance to landowners (urban and rural) and government agencies on soil and water conservation related issues.

James B. Christian, Chairman

Michael A. Megeath, Vice Chairman

Steve W. Cawthron, Director

C. Corey Childs, Director

James K. Wylie, Director

**O** 

A partnership to conserve natural resources

Loudoun Watershed Watch (LWW) fully supports the Loudoun Strategic Watershed Management Solutions (SWMS) initiative to coordinate existing watershed planning efforts and affect a shared vision for watershed activities in Loudoun County. Historically, Loudoun County has done little watershed management planning. All Loudoun streams are impacted to some degree by human activities. Several are degraded to the degree that they do not meet either Federal Clean Water Act or Virginia Water Quality Standards for recreational use and aquatic life. Portions of streams that have been designated as impaired by the state include: Catoctin Creek and its tributanes, Goose Creek and its tributaries, Little River, Limestone Branch, Piney Run, Broad Run, and Sugarland Run.

State water pollution reports (i.e., DEQ's Integrated Report and Total Maximum Daily Load reports) document that nonpoint pollution is the major cause of fecal bacteria pollution in Loudoun streams. Past initiatives to encourage landowners to voluntarily install BMPs, such as fencing-off streams to livestock, have had limited success. All major Loudoun watersheds are impacted by pollution from agricultural activities. In addition, TMDL reports for Goose Creek and Little River document that sediment from stream bank erosion and wash off from pastureland are a major cause of stream degradation. DEQ estimates that 68,000 tons of sediment is flowing into the Potomac River from Goose Creek every year. Further, DEQ estimates that a 6% increase in developed land will increase sediment loads from stream bank erosion another 36%.

Unfortunately, Loudoun County water resource programs are divided between a variety of County authorities, and there is little community and citizen investment. There are no countywide or watershed based plans to manage, protect, or restore degraded water resources. Rather programs are administered on a case-by-case, site-specific basis. Resources are used inefficiently, results are ineffective, and damages to private property are increasing. The SWMS initiative provides the opportunity to engage in countywide planning that will improve water quality and public health, provide economic opportunities for agriculture and tourism, protect the health of streams for aquatic life and riparian buffers for wildlife, promote the conservation of natural resources, and create additional recreational opportunities for all citizens. These benefits can be achieved in a cost-effective manner through phasing watershed planning activities, establishing priorities for protection and restoration projects, and better integrating water resource protection with county policies, codes, and ordinances.

Loudoun Watershed Watch commits to supporting the SWMS initiative in four ways:

- 1. SWMS Initiative -- LWW is one of many stakeholders in Loudoun that support watershed management planning and the Total Maximum Daily Load (TMDL) Implementation Planning initiatives. These stakeholders only lack a County-sanctioned authority that can organize and lead a collaborative County-Stakeholder initiative to compile and analyze water resource data and develop watershed management plans that address the objectives of the larger Potomac River and Chesapeake Bay watersheds initiatives. LWW also recognizes that subwatersheds provide homogeneous management areas and are probably the best units to use to develop effective management plans. Small subwatersheds will also facilitate timely monitoring, mapping, and other management tasks.
  - a. A representative of LWW will continue to work with SWMS, the Loudoun County, and other authority with responsibilities for implementing a workable watershed management planning process and developing watershed management plans.
  - LWW will continue to provide technical and management advice and support for the initiative as needed.
  - c. LWW will continue to encourage and organize citizen involvement in the SWMS initiative by promoting citizen participation, contributing volunteer resources, and encouraging citizen support for water resource conservation policies and practices.
- 2. Stream Monitoring Effective watershed management planning depends upon good water resource and water quality data collected from both probabilistic and trend stations. These data need to be collected using sampling protocols that will ensure that future monitoring data will be fully compatible with existing baseline data and state data. Data collected under these

guidelines can provide timely feedback on how stream habitats and biological communities are responding to the management practices outlined in the watershed plans.

- a. I.WW will provide technical expertise and collaborate to develop and maintain stream monitoring and habitat assessment protocols that meet the SWMS initiative goals.
- b. LWW will provide technical expertise, and will collaborate to develop a comprehensive surface water monitoring plan that includes both probabilistic and trend monitoring.
- LWW will continue to work in partnership with Loudoun Wildlife Conservancy to monitor the quality and health of streams.
- d. LWW will continue to make public its water quality monitoring data, analyses, and assessment reports on Loudoun streams.
- 3. Community Outreach and Education Successful watershed management planning in Loudoun County also depends on people valuing clean water and healthy streams, and contributing to the watershed plan implementation activities needed to protect and restore the County's water resources. LWW supports the SWMS planning goals that involve citizens and other stakeholders in the development of the Watershed Management Plans in order to enhance the plan's value to citizens.
  - a. LWW will collaborate with County authorities and other stakeholder groups to continue to develop educational materials on the conservation of water resources in Loudoun County.
  - b. LWW will collaborate with County authorities and other stakeholder groups to continue to organize community outreach and stewardship projects to engage citizens and communities in water quality protection and restoration activities.
  - LWW will continue to provide a website that offers educational materials on water resources protection and restoration to Loudoun County citizens.
- 4. Program Evaluation and Adaptive Management The effectiveness of a watershed management planning initiative for Loudoun County will be measured by the degree to which good quality streams are protected and streams of marginal quality are restored. Policy and management approaches and strategies to accomplish this will need to adapt to changing conditions over time and to problems identified in periodic assessments of accomplishments.
  - a. LWW will collaborate with County authorities and other stakeholder groups to collect and analyze data that can be used to assess progress under the watershed management planning initiative to protect and restore our water resources.
  - LWW will work with the Steering Committee and provide management expertise to County authorities to make adaptations in the SWMS process and watershed plan as needed.

6/14/06

Fred W. Fox

Volunteer, Loudoun Watershed Watch

Feel W. Fox

Submitted by Darrell Schwalm, Loudown Watershed Watch

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

I participated with other stakeholders in developing a consensus strategy for guiding Loudoun County's watershed planning, as expressed in the Declaration of Cooperation.

I support formation of a stakeholder Watershed Planning Stakeholder Steering Committee as the most effective watershed management structure to guide the development of Loudoun's watershed and subwatershed plans.

I support a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

This statement of support represents my individual views as a participant in the SWMS Team and does not necessarily represent my organization's official position or represent a commitment of my organization's resources. If my organization is able to make an official commitment of resources to the Loudoun watershed planning effort, a specific Declaration of Commitment is attached.

YOUR NAME PRINTED

James Mackie

Date

YOUR NAME SIGNED

Condown County Health Department

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

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I support a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

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BRUCE MEGRANAHAN

YOUR NAME PRINTED

R NAME SIGNED

Date

June 12, 2006

District of Columbia

College Park

W. Kelly Baty,

Frederick County

SWMS Project Manager

Gaithersburg

Loudoun County, Department of Building and Development

Greenbelt

1 Harrison Street, SE

Montgomery County

Prince George's County Leesburg, VA 20177

Rockville

Takoma Park

Fairfax

Subject: Letter of Support for Strategic Watershed Management Solutions (SWMS)

Alexandria

Arlington County

Dear Kelly,

Fairfax County Falls Church

Loudoun County Manassas Manassas Park

Prince William County

As the Metropolitan Washington Council of Governments (COG) representative on the SWMS Team, I recently had the pleasure of participating with you and other stakeholders in developing a consensus strategy for guiding Loudoun County's watershed planning, as expressed in the Declaration of Cooperation. Not surprisingly, I strongly support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

I also endorse the creation of a Watershed Planning Stakeholder Steering Committee to help guide the development of Loudoun's watershed and subwatershed plans. In addition, I am supportive of a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

Having been involved, since 1997, in joint COG/LSWCD stream assessment studies, I intend to continue to participate in and provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

This statement of support represents my individual views as a participant in the SWMS Team and does not necessarily represent COG's official position or represent a commitment of its resources.

Sincerely,

John Galli, Technical Manager

cc: Ted Graham

BUILDING AND DEVELOPMENT

777 North Capitol Street, N.E. Suite 300 Washington, D.C. 20002-4290 Telephone (202) 962-3200 Fax (202) 962-3201 TDD (202) 962-3213 Internet http://www.mwcog.org



June 7, 2006

USDA-Natural Resources Conservation Service (NRCS) supports this cooperative effort to improve the water quality of Loudoun County streams. NRCS will:

- Provide appropriate staff to support the efforts and programs of the Loudoun Soil and Water Conservation District.
- Administer Federal soil and water conservation programs created under the "Farm Bill".
- Provide technical standards and specifications for appropriate soil and water conservation practices.
- Provide on site design and installation assistance (both technical and financial) for conservation practices to landowners in Loudoun County.
- Provide soils data and interpretations to landowners and others.
- Assist with educational efforts of this partnership.
- Participate in future meetings of this partnership.

Lawrence S. Wilkinson District Conservationist

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

I participated with other stakeholders in developing a consensus strategy for guiding Loudoun County's watershed planning, as expressed in the Declaration of Cooperation.

I support formation of a stakeholder Watershed Planning Stakeholder Steering Committee as the most effective watershed management structure to guide the development of Loudoun's watershed and subwatershed plans.

I support a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

This statement of support represents my individual views as a participant in the SWMS Team and does not necessarily represent my organization's official position or represent a commitment of my organization's resources.

Mark E. Peterson

YOUR NAME, TYPED (Please sign above)

Date (June 14, 2006)

The Piedmont Environmental Council (PEC) commits to provide watershed technical support and data; support for citizen/public involvement; education, funding, policy and regulation support.

Watershed technical support and data

- Provide GIS data & maps as well as entire body of recommendations to Loudoun County from Goose Creek Assessment work already completed. Provide similar information resulting from the Leesburg project.
- Provide GIS data to Loudoun County regarding conservation easements and easement monitoring.

#### Water Quality

- Continue to work on obtaining conservation easements in the entire Goose Creek watershed, building on the results & recommendations in the reports.
- Focus on obtaining landowner commitments to plant riparian buffers & involve Loudoun County Soil & Water Conservation District & NRCS.
- Encourage landowners to commit to language in easement documents to maintain riparian buffers in the Goose Creek watershed, particularly in those subwatersheds deemed as Rurally Impacted, and High Quality.
- Work with landowners to identify important natural resources on their property and how the landowners can meet their needs while preserving the resources.
- Continue to work with Parks & Recreation Department to help fill in the blanks on streamside trail connections that they are working to complete.

#### Support for Citizen/Public Involvement

- Help spread the word and work with the grassroots to encourage watershed planning participation. Recruit key volunteers to help lead the effort.
- Utilize a "neighborhood party" outreach model to work with residents to encourage critical actions to improve watershed water quality.
- Provide SWMS team interface to County FSMPRC (for the duration of my service).

#### Education

- Help to train volunteers in the Center for Watershed Protection methodologies for stream assessment and associated field work.
- Continue to encourage schools participation by following the high school involvement model started in Purcellville.
- Continue to participate in LWW and its Family Stream Day activity to inform younger students and their families.

#### Funding

- Seek grant funding to help support our continued watershed work.
- Policy and Regulation Support
  - Provide SWMS team interface to County FSMPRC (for the duration of my service).
  - Advocate for LID practices and policies which would support the watershed management goals.

Bem Bingol, Field Officer NAME, TITLE for Christopher G. Miller President

Submitted by Gem Bingol, Piedmont Environmental Council

\* to the extent possible

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

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Gem Bingol for Christopher G. Hiller

14-06

YOUR NAME PRINTED

Date

YOUR NAME SIGNED President

Predmont Environmental Council

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YOUR NAME PRINTED

Date

10-14-010

YOUR NAME SIGNED

## DRAFT 6/14/06

As an individual participant in the SWMS Team, I support the protection of Loudoun County's water resources.

Dave Snellings

Date (June 14, 2006)

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Robert P. Swanson , 6/14/06 YOUR NAME PRINTED Date

YOUR NAME SIGNED

Virginia DEQ
Your Organization Printed (Only If appropriate)

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Robert S. Pace

Chief, Planning Division

US Army Corps of Engineers, Baltimore District

Cours S. Bare.

Date

Trine 14th 2006



## Loudoun County, Virginia

Department of General Services 211 Gibson Street, N.W. Suite 123, Leesburg, VA 20176 Phone: 703/771-5552 Fax:703/737-8008

# Signatory Page for Participating Members of the SWMS Team

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

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David S. Ward

Loudoun County, Dept of General Services

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RANDALL J. WILLIFORD	_	6/14
YOUR NAME PRINTED		L
Rank Of Willifed	_	
YOUR NAME SIGNED		
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